

WHAT IS CLAIMED IS:

1. A profile producing method of producing a
profile representative of an association between a first
5 color data representative of coordinates on a device-
dependence color space dependent on a device mediating
between image data including color data and a color image,
and a second color data representative of coordinates on a
common color space independent of devices, said profile
10 producing method comprising:

a color association definition obtaining step of
obtaining a color association definition defining an
association between the first color data representative of
coordinates on the device-dependence color space and the
15 second color data representative of coordinates on the
common color space; and

a profile producing step of producing a profile
defining an association between the first color data
representative of coordinates on the device-dependence
20 color space and smoothed second color data representative
of coordinates on the common color space, in accordance
with the color association definition obtained in said
color association definition obtaining step, via a
smoothing step of smoothing the second color data
25 representative of coordinates on the common color space to
the first color data representative of coordinates on the
device-dependence color space.

2. A profile producing method according to claim 1, wherein said color association definition obtaining step comprises:

5 a color chart producing step of causing an output device to output a color chart composed of a plurality of color patches associated with a plurality of first color data; and

10 a color chart colorimetry step of measuring a plurality of color patches constituting the color chart obtained in said color chart producing step to determine the second color data for the color patches,

15 wherein the color association definition is obtained through said color chart producing step and said color chart colorimetry step.

3. A profile producing method according to claim 1, wherein said profile producing step comprises:

20 a smoothing step of smoothing the second color data to the first color data using the first color data and the second color data constituting the color association definition obtained in said color association definition obtaining step to determine a new color association definition defining an association between the first color data and smoothed second color data; and

25 a profile construction step of constructing a profile in accordance with the new color association

definition obtained in said smoothing step, the profile consisting of pairs of the first color data and the second color data mutually associated, which are more than the number of pairs of the mutually associated first color data and the smoothed second color data, constituting the new color association definition.

4. A profile producing method according to claim 1, wherein said profile producing step comprises:

a color association definition reconstruction step of producing a new color association definition in accordance with the color association definition obtained in said color association definition obtaining step, said new color association definition consisting of pairs of the first color data and the second color data, which are more than the number of pairs of the mutually associated first color data and the second color data, constituting the color association definition, and which are equal in number to pairs of the mutually associated first color data and the second color data, constituting the finally produced profile; and

a smoothing step of smoothing the second color data to the first color data using the first color data and the second color data constituting the color association definition obtained in said color association definition obtaining step,

whereby said profile producing step produces a

profile defining an association between the first color data and smoothed second color data.

5. A profile producing method according to claim 5 1, wherein said color association definition obtaining step is a step of obtaining a color association definition consisting of pairs of the first color data and the second color data, which are equal in number to pairs of the mutually associated first color data and the second color data, constituting the finally produced profile; and 10

said profile producing step is a step of producing a profile defining an association between the first color data and smoothed second color data via a smoothing step of smoothing the second color data to the first color data 15 using the first color data and the second color data constituting the color association definition obtained in said color association definition obtaining step.

6. A profile producing method according to claim 20 1, wherein said smoothing step is a step of performing a smoothing on a partial area on a color space.

7. A profile producing method according to claim 6, wherein said smoothing step is a step of performing a 25 smoothing on a high density area on a color space.

8. A profile producing apparatus for producing a

profile representative of an association between a first color data representative of coordinates on a device-dependence color space dependent on a device mediating between image data including color data and a color image, and a second color data representative of coordinates on a common color space independent of devices, said profile producing apparatus comprising:

a color association definition obtaining section for obtaining a color association definition defining an association between the first color data representative of coordinates on the device-dependence color space and the second color data representative of coordinates on the common color space; and

a profile producing section for producing a profile defining an association between the first color data representative of coordinates on the device-dependence color space and smoothed second color data representative of coordinates on the common color space, in accordance with the color association definition obtained in said color association definition obtaining section, said profile producing section including a smoothing processing section for smoothing the second color data representative of coordinates on the common color space to the first color data representative of coordinates on the device-dependence color space.

9. A profile producing apparatus according to

claim 8, wherein said smoothing processing section receives the color association definition obtained in said color association definition obtaining section, and smoothes the second color data constituting the color association

5 definition to the first color data constituting the color association definition to produce a new color association definition defining an association between the first color data and smoothed second color data, and

10 said profile producing section further comprises in addition to said smoothing processing section a profile construction section for constructing a profile in accordance with the new color association definition obtained in said smoothing processing section, the profile consisting of pairs of the first color data and the second
15 color data mutually associated, which are more than the number of pairs of the mutually associated first color data and the smoothed second color data, constituting the new color association definition.

20 10. A profile producing apparatus according to claim 8, wherein said profile producing section comprises a color association definition reconstruction section for producing a new color association definition in accordance with the color association definition obtained
25 in said color association definition obtaining section, said new color association definition consisting of pairs of the first color data and the second color data, which

are more than the number of pairs of the mutually
associated first color data and the second color data,
constituting the color association definition, and which
are equal in number to pairs of the mutually associated
5 first color data and the second color data, constituting
the finally produced profile, and wherein

said smoothing processing section receives the new
color association definition obtained in said color
association definition obtaining section, and smoothes the
10 second color data constituting the new color association
definition to the first color data constituting the new
color association definition obtained in said color
association definition obtaining section, thereby producing
a profile defining an association between the first color
15 data and smoothed second color data.

11. A profile producing apparatus according to
claim 8, wherein said color association definition
obtaining section obtains a color association definition
20 consisting of pairs of the first color data and the second
color data, which are equal in number to pairs of the
mutually associated first color data and the second color
data, constituting the finally produced profile, and

said profile producing section produces a profile
25 defining an association between the first color data and
smoothed second color data in such a manner that the color
association definition obtained in said color association

definition obtaining section is fed to said smoothing
processing section to smooth the second color data
constituting the color association definition to the first
color data constituting the color association definition
5 obtained.

12. A profile producing apparatus according to
claim 8, wherein said smoothing processing section performs
a smoothing on a partial area on a color space.

13. A profile producing apparatus according to
claim 12, wherein said smoothing processing section
performs a smoothing on a high density area on a color
space.

14. A profile producing apparatus according to
claim 8, wherein said profile producing apparatus further
comprises a handler for designating an area to be subjected
to the smoothing processing, and said smoothing processing
section performs a smoothing on an area designated in
accordance with an operation of said handler.

15. A profile producing apparatus according to
claim 8, wherein said profile producing apparatus further
comprises an area display section for displaying an area
for which a smoothing processing is necessary.